

AMENDED CLAIMS

[received by the International Bureau on 03 August 2005 (03.08.05),
original claims 1 to 47 replaced by new claims 1 to 35 (4 pages)]

1. A water-based composition for treating a metal, comprising a treatment agent selected from an alkanethiol, alkyl thioglycollate, dialkyl sulfide or dialkyl disulfide, 5 and in concentrations effective to solubilize said treatment agent:

a non-ionic relatively hydrophobic surfactant which is a compound of the formula



wherein R_1 represents C_{10} - C_{24} alkyl or alkenyl, m is 0 or 1 and n is 1 or 2, or which is 10 ethoxylated fatty acid monoglyceride;

an anionic surfactant; and

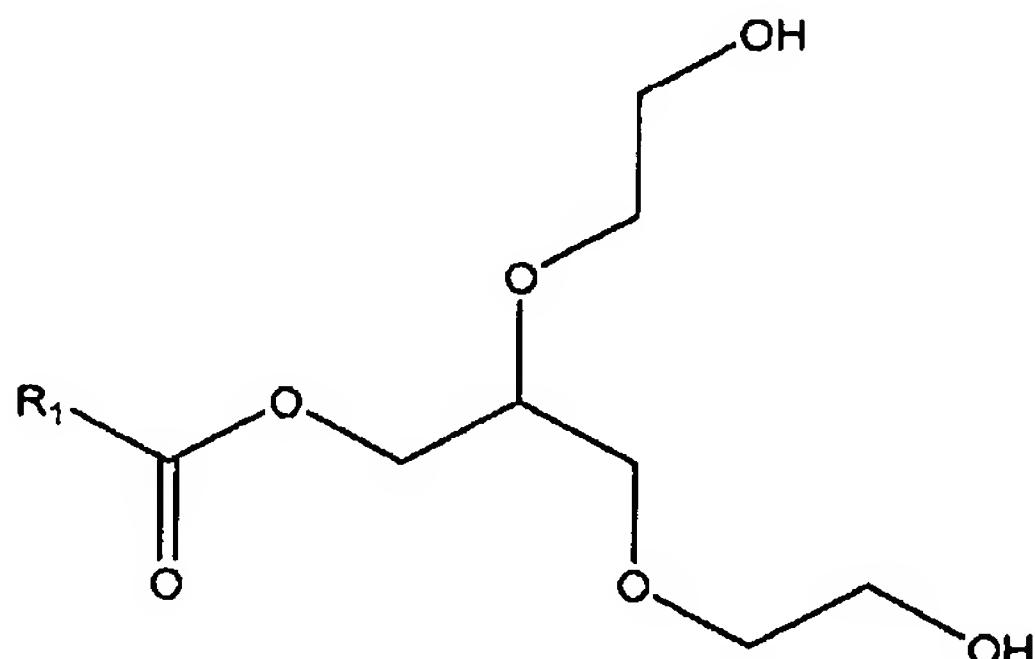
a zwitterionic surfactant selected from betaine surfactants, imidazoline-based surfactants, aminoalkanoate surfactants and iminodialkanoate surfactants.

15 2. The composition of claim 1, wherein the treatment agent is hexadecyl or octadecyl mercaptan.

3. The composition of claim 1 or 2, wherein the non-ionic relatively hydrophobic surfactant comprises cocamide DEA.

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4. The composition of claim 1, wherein the non-ionic relatively hydrophobic surfactant comprises an ethoxylated fatty acid monoglyceride of the formula:



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wherein R_1 represents C_{10} - C_{24} alkyl or alkenyl.

5. The composition of claim 4, wherein the surfactant is a compound in which R1 represents C₁₂-C₁₈ alkyl or alkenyl.
- 5 6. The composition of claim 5, wherein the surfactant is glycereth-2-cocoate.
7. The composition of any preceding claim, comprising 0.5-10 wt % of the relatively hydrophobic surfactant.
- 10 8. The composition of any preceding claim, comprising 1-6 wt % of the relatively hydrophobic surfactant.
9. The composition of any preceding claim, comprising 2-5 wt % of the relatively hydrophobic surfactant.
- 15 10. The composition of any preceding claim, further comprising a polyol.
11. The composition of claim 10, comprising 0.5-10 wt % of the polyol.
- 20 12. The composition of claim 10, comprising 1-8 wt % of the polyol.
13. The composition of claim 10, comprising 1-5 wt % of the polyol.
14. The composition of any of claims 10-13, wherein the polyol is glycerol.
- 25 15. The composition of any preceding claim, wherein the anionic surfactant is of the formula RO-(CH₂CH₂)_nSO₃M wherein R represents C₁₀-C₁₈ alkyl, n is 2-6 and M represents a monovalent cation.
- 30 16. The composition of claim 15, wherein the anionic surfactant is a monovalent cation salt of laureth sulfate.

17. The composition of any preceding claim, wherein the amount of anionic surfactant (solids) is 0.1-15 wt%.
18. The composition of claim 17, wherein the amount of anionic surfactant (solids) is 0.3-10 wt%.
19. The composition of claim 17, wherein the amount of anionic surfactant (solids) is 0.5-1 wt%.
- 10 20. The composition of any preceding claim, wherein the zwitterionic surfactant is cocamidopropyl betaine.
- 15 21. The composition of any preceding claim, wherein the zwitterionic surfactant is present in an amount of 0.3-6 wt%
22. The composition of claim 21, wherein the zwitterionic surfactant is present in an amount of 0.6-3 wt%.
23. The composition of claim 21, wherein the zwitterionic surfactant is present in an amount of 0.9-1.5 wt%.
24. A composition according to any preceding claim comprising treatment agent in an amount of 0.1-5 wt%
25. 25. A composition according to claim 24 comprising treatment agent in an amount of 0.5-2 wt%.
26. A composition according to claim 24, comprising treatment agent in an amount of about 1 wt%.
- 30 27. A composition according to any preceding claim, further comprising a salt of a strong base with a strong mineral acid.

28. The composition of claim 27, wherein the salt is sodium chloride or sodium sulfate.

5 29. The composition of claim 27 or 28, comprising 0.1-3 wt% of said salt.

30. The composition of claim 27 or 28, comprising 0.5-2 wt% of said salt.

31. The composition of claim 27 or 28, comprising about 1 wt% of said salt.

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32. The composition of any preceding claim, which is a polishing dip and further comprises an acid and a thiourea.

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33. The composition of any of claims 1-31, which is a cream or paste polish further comprising a solid polishing medium.

34. The composition of claim 33, wherein the polishing medium is precipitated chalk, infusorial earth, silica or γ -alumina.

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35. Use of the composition of any of claims 1-34 for the treatment of a silver-copper alloy, a silver-copper-germanium alloy, copper, brass or nickel.

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